AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1. (currently amended) A gas control system that controls energizing an electric resistance ceramic igniter from a power source, said control system comprising:

(i) a gas-fired appliance;

(ii) an electric resistance ceramic igniter;

(iii) a control device being configured and arranged so as to control operation of the electric resistance ceramic igniter, the control device and the electric resistance ceramic igniter being operationally coupled to the appliance;

wherein the control device is configured and arranged so as to warm-up the electric resistance ceramic igniter to temperature at or above an ignition temperature for a gas being combusted; and

wherein the control device also is configured and arranged so that following successful ignition of the gas, voltage and current applied to the igniter are ~~operation of the electric resistance igniter is~~ controlled so the electric resistance ceramic igniter is maintained at a temperature less than the gas ignition temperature but above room temperature and so that upon detection of a loss of flame ~~so~~ the electric resistance ceramic igniter can be re-heated so as to re-ignite the gas within ~~a re-ignition time period of~~ about 4 ~~6~~ second or less.

Claim 2. (previously presented) The gas control system of claim 1, wherein the gas control system further controls operation of one or more gas control valves, which valves control the flow of gas for combustion, and wherein the control device is configured and arranged so as to open the one or more gas valves after the control device determines that the electric resistance ceramic igniter is heated to a temperature ate least equal to the gas ignition temperature.

Claim 3. (previously presented) The gas control system of claim 1, wherein the control device is configured and arranged so as to selectively control energization of the electric resistance ceramic igniter following successful ignition of the gas, where the electric resistance ceramic is selectively energized so that the electric resistance ceramic igniter is maintained at a predetermined temperature that is less than gas ignition temperature, which predetermined temperature is established such that a time required to reheat the electric resistance ceramic igniter from the predetermined temperature to a minimum temperature required for ignition of the gas, is less than a desired time period for re-ignition.

Claim 4. (previously presented) The gas control system of claim 3, wherein the control device includes:

a switching mechanism operably connected between the electric resistance ceramic igniter and the power source;

a micro-controller and an applications program for execution in the micro-controller; and

wherein the applications program includes instructions and criteria for

outputting control signals to the switching mechanism to selectively control voltage and current being applied to the electric resistance ceramic igniter,

outputting control signals to the switching mechanism so as to heat the electric resistance ceramic igniter to the gas ignition temperature, and

outputting control signals to the switching mechanism, following successful ignition of the gas, to selectively heat the electric resistance ceramic igniter so as to maintain the igniter at a predetermined temperature that is less than the gas ignition temperature.

Claim 5. (previously presented) The gas control system of claim 4, wherein the applications program further includes instructions and criteria for:

heating the electric resistance ceramic igniter to the predetermined temperature that is set so that a time required to reheat the electric resistance ceramic igniter from

the predetermined temperature to a minimum temperature required for ignition of the gas, is less than a desired time period for re-ignition.

Claim 6. (currently amended) A gas control system that controls energizing an electric resistance ceramic igniter from a power source and that controls operation of one or more gas control valves, which valves control the flow of gas for combustion, said gas control system comprising:

(i) an electric resistance ceramic igniter;

(ii) a control device being operably coupled between the electric resistance ceramic igniter and the power source and being operably connected to the one or more gas valves;

wherein the control device is configured and arranged to selectively apply a voltage to the electric resistance ceramic igniter responsive to an input signal calling for heat; and

wherein the control device is configured and arranged:

so the electric resistance ceramic igniter is heated by the selectively applied voltage so as to be at a temperature at or above a temperature for igniting the gas, a gas ignition temperature,

such that upon determining that the electric resistance ceramic igniter has been heated to the gas ignition temperature, the one or more gas valves are opened, and

such that upon determining that the gas has been successfully ignited, the voltage being applied to the electric resistance ceramic igniter is controlled so as to maintain the electric resistance ceramic igniter at an operational temperature that is less than the gas ignition temperature but above room temperature, and so that upon detection of a loss of flame the electric resistance ceramic igniter can be re-heated so as to re-ignite the gas within ~~a re-ignition time period of~~ about 4 ~~6~~ second or less.

Claims 7-15. (cancelled)

Claim 16. (previously presented) The gas control system of claim 1 wherein the gas-fired appliance is a stove, oven, or clothes dryer.

Claim 17. (previously presented) The gas control system of claim 1 wherein the gas-fired appliance is a water heater.

Claim 18-20. (cancelled)

Claim 21. (cancelled)

Claim 22. (cancelled)

Claims 23-31. (cancelled)

Claim 32. (previously presented) The gas control system of claim 1 wherein the gas-fired appliance is a stove.

Claim 33. (previously presented) The gas control system of claim 1 wherein the gas-fired appliance is an oven.

Claim 34. (previously presented) The gas control system of claim 1 wherein the gas-fired appliance is a clothes dryer.

Claim 35. (previously presented) The system of claim 1 wherein the gas is propane.

Claim 36. (previously presented) The system of claim 1 wherein the electric resistance ceramic igniter is a sintered ceramic igniter.

Claim 37. (previously presented) The system of claim 6 wherein the electric resistance ceramic igniter is a sintered ceramic igniter.

Claim 38. (currently amended) A gas control system that controls energizing an electric resistance sintered ceramic igniter from a power source, said control system comprising:

(i) a gas-fired stove, oven, clothes dryer or water-heater;

(ii) an electric resistance sintered ceramic igniter;

(iii) a control device being configured and arranged so as to control operation of the electric resistance ceramic igniter, the control device and the electric resistance ceramic igniter being operationally coupled to the appliance;

wherein the control device is configured and arranged so as to warm-up the electric resistance ceramic igniter to temperature at or above an ignition temperature for a gas being combusted; and

wherein the control device also is configured and arranged so that following successful ignition of the gas, ~~operation of the electric resistance igniter is~~ voltage and current applied to the igniter are controlled so the electric resistance ceramic igniter is maintained at a temperature less than the gas ignition temperature but above room temperature and so that upon detection of a loss of flame the electric resistance ceramic igniter can be re-heated so as to re-ignite the gas within ~~a re-ignition time period of~~ about 4 ~~6~~ second or less.

Claim 39. (previously presented) The gas control system of claim 38 wherein the system comprises a gas-fired stove, oven, or water-heater.